



**WASTE MANAGEMENT**

601 Madison Road  
East St. Louis, Illinois 62201  
(618) 271-6788  
(618) 271-1227 Fax

June 1, 2000

Mr. Donald Sutton, PE, Manager  
Illinois Environmental Protection Agency  
Division of Air Pollution Control - Permit Section  
1021 North Grand Avenue East  
Springfield, Ill 62702

163075AAI – St. Clair County  
Waste Management – Cottonwood Hills Recycling and Disposal Facility

Initial Design Capacity and NMOC Emissions Rate Report

Dear Mr. Sutton:

This letter transmits the Initial Design Capacity and NMOC Emissions Rate Report for the above referenced facility. The facility is a new MSW landfill that began construction in March 2000.

If you have any questions, please call me at (618) 271-6788 Ext 122.

Sincerely,  
Waste Management of Illinois, Inc.

A handwritten signature in cursive script that reads 'Ernest H. Dennison'.

Ernest H Dennison, PE  
Environmental Engineer

Cc: IEPA – Collinsville Field Office



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION  
P.O. BOX 19506  
SPRINGFIELD, ILLINOIS 62794-9506

**STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES AND  
GUIDELINES FOR CONTROL OF EXISTING SOURCES: MUNICIPAL SOLID WASTE LANDFILLS  
(40 CFR PART 60, SUBPARTS WWW AND Cc)**

**INITIAL DESIGN CAPACITY AND  
NONMETHANE ORGANIC COMPOUNDS EMISSION RATE REPORTS**

FORM MUST BE SUBMITTED BY OCTOBER 1, 1996.

**FACILITY INFORMATION\***

1. Owner/Operator: Waste Management of Illinois, Inc.  
Name of Landfill: Cottonwood Hills Recycling and Disposal Facility  
Mailing Address: 601 Madison Road  
City: East St Louis County: St Clair State: Illinois Zip: 62201  
Name of Contact Person: Ernest Dennison Title: Environmental Engineer  
Phone: ( 618 ) 271-6788 X 122  
Street Address of Landfill: 10400 Hillstown Road  
City: Marissa County: St Clair State: Illinois Zip: 62257  
Illinois EPA ID Number(s): Land 1630755017 Air 163075AAI

2. Has this landfill accepted municipal solid waste (MSW)\*? Yes ☐ No ☒

If No, describe the type of waste accepted: Scheduled to open Fall 2000  
will accept MSW, Special and Demo Wastes

If you checked No, go to item 12 (page 5 of 6), sign and return form to the address given at the top of this page. Otherwise, continue with item 3 below.

3. Is this landfill adjacent to any other landfill? Yes ☐ No ☒

If Yes, provide the ID Number(s) of the other landfill: Land \_\_\_\_\_ Air \_\_\_\_\_

\*A separate form must be completed for each landfill.

\*For an explanation of terms, see page 5 of 6 of this form.

Pursuant to 415 I.L.C.S. 5/4 (1992), the Agency is authorized to obtain this and any other information as may be required to carry out the purposes of the Illinois Environmental Protection Act. The failure to provide such information may result in the imposition of civil penalties, criminal fines or imprisonment for up to one year. This form has been approved by the Form Management Center.

4. Check one of the four boxes below:

- A. ☐ this facility is an *existing*\* MSW landfill.
- B. ☒ this facility is a *new*\* MSW landfill.
- C. ☐ this facility is a *closed*\* MSW landfill that has accepted waste since November 8, 1987.
- D. ☐ this facility is a *closed*\* MSW landfill that has not accepted waste at any time since November 8, 1987.

#### DATES

5. Date(s) construction or operating permit(s) were issued:

	Land	Air
Permit Number(s):	<u>1998-110-LF</u>	<u>97040086</u>
Date(s) issued:	<u>7/15/99</u>	<u>7/18/97</u>

6. (a). Date landfill began development\*, construction\*, modification\*, or reconstruction\*: 3/7/00
- (b). Date landfill first accepted solid waste: Fall 2000

7. If you checked either box 4C or box 4D in item 4 above, complete items 7(a) and 7(b) below. Otherwise, continue with item 8 below.

- (a). Date of landfill closure: NA
- (b). Has the facility submitted a Certification of Closure Report to the Agency? Yes ☐ No ☐  
If Yes, attach a copy of Certification of Closure issued by the Agency to this form.

#### DESIGN CAPACITY DETERMINATION

8. Maximum design capacity\* of landfill: 25.0 million Mg ( 30.1 million m<sup>3</sup> ) 39,336,000 bcy  
x 1400 lbs/bcy  
= 27,535,200 Tons

Note: (i) The maximum design capacity shall be calculated using good engineering practices.

(ii) To convert tons into megagrams (Mg) multiply by 0.9078; and to convert cubic yard into cubic meter (m<sup>3</sup>) multiply by 0.7646.

9. Attach design capacity calculations to this form and provide the following parameters:

- (a). Area of landfill: 206 acres
- (b). Average depth of solid waste: 118 ft
- (c). Average solid waste acceptance rate: 350,000 tons/yr
- (d). Compaction density: 1400 lb/yd<sup>3</sup>

10. Pursuant to 40 CFR 60.757(a)(2)(i), a map or plot of the landfill must be attached to this form to be complete. The map or plot shall provide the size and location of the landfill, as well as, identify all areas where solid waste may be landfilled according to the provisions of the State or local permit, as well as, siting ordinances.

- Is a map or plot of the landfill attached to this form?

Yes ☒ No ☐

- If No, was a map or plot of the landfill submitted as part of a previously approved permit application?

Yes ☐ No ☐

- If Yes, include the permit number: \_\_\_\_\_

If you checked box 4(D) in item 4 above, or if the maximum design capacity of landfill as indicated in item 8 above, is less than 2.5 million Mg or 2.5 million cubic meters, go to item 12 (page 5 of 6), sign and return form to the address given at the top of this page. Otherwise, continue with item 11 below.

### NONMETHANE ORGANIC COMPOUNDS (NMOC) EMISSION RATE DETERMINATION

11. (i) Pursuant to 40 CFR 60.754(a)(1), calculate the total NMOC emission rate ( $M_{NMOC}$ ) using either equation 1 below, if the actual year-to-year solid waste acceptance rate is known or equation 2 below, if the actual year-to-year solid waste acceptance rate is not known. The default values are provided below. All parameter values other than the default values used in calculating  $M_{NMOC}$  must be indicated in lines (a) - (g) below equation 1 or equation 2.

- (ii). If you do not want to calculate  $M_{NMOC}$ , the Agency can calculate  $M_{NMOC}$ , if the required parameter values are provided.

- A. **Equation 1.** For landfills where the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^n 2 k L_0 M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9}) = \text{See Below Mg/yr}$$

where,

$M_{NMOC}$  = mass emission rate of NMOC, Mg/yr.

- |      |  |                      |                            |
|------|--|----------------------|----------------------------|
| (a). | methane generation rate constant:            | 0.05                 | k (1/yr.)                  |
| (b). | methane generation potential:                | 170                  | $L_0$ ( $m^3$ /Mg)         |
| (c). | mass of solid waste in the $i^{th}$ section: | _____                | $M_i$ (Mg)                 |
| (d). | age of the $i^{th}$ section:                 | _____                | $t_i$ (years)              |
| (e). | concentration of NMOC:                       | 4,000                | $C_{NMOC}$ (ppm as hexane) |
| (f). | conversion factor:                           | $3.6 \times 10^{-9}$ |                            |
| (g). | number of sections accepting MSW:            | _____                | n                          |

Note: The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for  $M_i$  [line (c) above] if the provisions specified in 40 CFR 60.758(d)(2) are followed.

$$Q_i = 2 (0.05) (170) ( ? ) (e^{-(0.05)( ? )}) (4,000) (3.6 \times 10^{-9}) = \text{mass emission rate from the } i^{th} \text{ section}$$

$$M_{NMOC} = \sum Q_i = \underline{0^*} \text{ Mg/yr}$$

\* New Facility has not begun receiving waste

PAGE 3 OF 6

B. **Equation 2.** For landfills where the actual year-to-year solid waste acceptance rate is not known.

$$M_{\text{NMOC}} = 2I_{\text{w}} R (e^{-k_c} - e^{-k_i}) (C_{\text{NMOC}}) (3.6 \times 10^{-9}) = \frac{\text{See Page 3}}{\text{Equation 1}} \text{ Mg/yr}$$

where,

$M_{\text{NMOC}}$  = mass emission rate of NMOC, Mg/yr.

- |      |   |                      |  |
|------|---|----------------------|--|
| (a). | methane generation potential:   | 170                  | $\text{L}_0 (\text{m}^3/\text{Mg})$      |
| (b). | average annual acceptance rate:   | _____                | $R (\text{Mg/yr.})$                      |
| (c). | methane generation rate constant:   | 0.05                 | $k (\text{l/yr})$                        |
| (d). | years since closure<br>(for active landfill $c = 0$ and $e^{-k_c} = 1$ ): | _____                | $c (\text{years})$                       |
| (e). | age of landfill:  | _____                | $t (\text{years})$                       |
| (f). | concentration of NMOC:  | 4,000                | $C_{\text{NMOC}} (\text{ppm as hexane})$ |
| (g). | conversion factor:  | $3.6 \times 10^{-9}$ |  |

Note: The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for  $R$  [line (b) above] if the provisions specified in 40 CFR 60.758(d)(2) are followed.

$$M_{\text{NMOC}} = 2 (170) ( ? ) (e^{-(0.05)( ? )} - e^{-(0.05)( ? )}) (4,000) (3.6 \times 10^{-9}) = \text{_____} \text{ Mg/yr}$$

C. Pursuant to 40 CFR 60.757(b)(2), all the data, calculations, sample reports and measurements used to estimate the annual emission rate must be attached to this form, even if you choose to have the Agency calculate  $M_{\text{NMOC}}$ .

- Are all the data, calculations, sample reports and measurements used to estimate the annual emission rate attached to this form?

Yes ☐

No ☒

- If No, explain New Facility has not begun receiving waste

12. I CERTIFY THE INFORMATION CONTAINED IN THIS REPORT TO BE ACCURATE AND TRUE TO THE BEST OF MY KNOWLEDGE.

Joe Durako  
Signature

6/1/00  
Date

Print or type the name and title of a Responsible Official for this facility:

Joe Durako  
Name

Division Vice President  
Title

A Responsible Official shall be one of the following:

- The president, vice president, secretary, or treasurer of a corporation that owns the facility, or a duly authorized representative that is responsible for the overall operation of the facility;
- The owner of the facility;
- A principal executive officer if the facility is owned by the Federal, State, City, or County government;
- A general partner of a partnership that owns the facility.

#### **Explanation of Terms**

**Available Design Capacity or Available Capacity** means the total amount of waste that a landfill can accept as indicated in a permit issued by the Agency or other applicable governmental organization. A landfill is not considered to have any available capacity if the facility has completed closure and it has received a closure certification from the Agency (See *Closed Landfill*). However, when a closed landfill reopens the design capacity shall include the design capacity(s) of the closed section(s) plus the design capacity of the new section(s) being added. Such a municipal solid waste landfill (MSWL) may become subject either to the new source performance standards (NSPS) or the emission guidelines (EG) depending on the date the old section(s) of the facility closed and the date the new or modified section(s) opened.

**Closed Landfill** means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed. This includes those landfills that have received a certification of closure from the Bureau of Land (BOL) pursuant to 35 IAC 807.508 or 813.402 and meet the criteria of 40 CFR 258.60. The MSWL cannot receive waste unless it first files a notification of modification as prescribed under 40 CFR 60.7(a)(4), receives local siting, and appropriate BOL and Bureau of Air (BOA) construction and operating permits.

**Commenced** the act of entering into a binding agreement or contractual agreement to undertake and complete, within a reasonable time, a continuous program of construction or modification.

**Construction** means the commencement of on-site fabrication, erection, expansion, or installation of an affected facility or equipment. Construction with respect to a landfill shall include site excavation and preparation pursuant to a BOL Development Permit as defined under 35 IAC 807.104 and 807.201. This includes the on-site fabrication, erection, or installation of air pollution control equipment.

**Design capacity:**

- (i) **Open landfill** means the maximum volume of solid waste that can be placed within the permitted waste boundaries, as specified in a State or local construction or operating permit, as well as, siting ordinance.
- (ii) **Closed landfill** means the maximum volume of solid waste placed within the permitted waste boundaries defined in the facility closure report.

**Development** means construction or expansion of a MSWL (See Construction)

**Existing facility**, with reference to MSWLs and the EG, means any landfill that commenced construction, reconstruction or modification before May 30, 1991, and that has accepted waste since November 8, 1987.

**Household waste** means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

**Landfill** means the area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 CFR 257.2.

**Modification** means any physical change or change in the method of operation that would result in an increase of emissions of air pollutants at a facility unless accommodated by the existing design and capabilities of the facility and its current permits. Modifications of landfills include reopening of closed landfills, expansion of an active landfills, or development of "new" landfills adjacent to existing landfills for which new or revised permits from the State are needed.

**Municipal solid waste landfill, MSW landfill, or MSWL** means the entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, non-hazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. An entire landfill is the total landfill property designated for solid waste disposal irrespective of subdividing geographical landmarks such as access roads or disposal cell boundaries, or multiple ownership. The total landfill property includes all areas actively receiving refuse, all closed disposal cells, and all areas designated to receive refuse in the future pursuant to a siting permit document. The landfill may be publicly or privately owned.

**New** municipal solid waste landfill means a landfill that commenced construction, reconstruction or modification or began accepting waste on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with the emission guidelines, pursuant to 40 CFR 60, Subpart Cc, with no increase in emissions, are not considered construction, reconstruction, or modification for the purposes of the NSPS for MSWLs (i.e., the installation of control equipment).

**Reconstruction** means the replacement of components of an existing facility to such an extent that:

- (i) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and
- (ii) It is technologically and economically feasible to meet the applicable standards set forth in an applicable NSPS or EG.

**Solid waste** means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

